

U.S.S.N. 09/684,058

REMARKS

Thorough examination and careful review of the application by the Examiner is noted and appreciated.

Claims 1-17 are pending in the application. Claims 1-17 stand rejected.

Claim Rejections Under 35 USC §103

Claims 1-2, 4, 8, 10 and 12-17 are rejected under 35 USC §103(a) as being unpatentable over Murakami et al '837 in view of Flowers et al '142 and Plesinger '354. It is contended that Murakami et al teaches a touch screen for an LCD panel that has a backlight panel for supplying illumination and for mounting to the frame. The backlight panel has a front surface onto which pressure-sensitive transducers 10 are mounted. It is further contended that while Murakami et al does not specifically teach all the details of the mounting assembly as described in claims 1 and 10, such is disclosed by Plesinger and Flowers.

The rejection of claims 1-2, 4, 8, 10 and 12-17 under 35 USC §103(a) based on Murakami et al, Flowers et al and Plesinger is respectfully traversed.

U.S.S.N. 09/684,058

Murakami et al discloses a position detection detecting device wherein the position on a surface of an implement including a tuned circuit with a predetermined resonant frequency is determined and displayed by an apparatus having a housing including the surface. Murakami et al discloses in Fig. 2 and at col. 4, lines 9-20:

"Referring then to Fig. 2 which is a cross-sectional view of the structure of the tablet 1, the tablet 1 is constituted by: a sensing section 10 adapted to detect coordinates representing a position designated with the pen 2 in X- and Y-directions position, the sensing section 10 having a transparent base in the form of a plate ...; a flat-type coordinate display panel 50 placed on the sensing section 10 ...; a back light 60 disposed under the sensing section 10..."

Murakami et al therefore teaches a sensing section 10 that is a single piece in the form of a plate. No where in Murakami et al is disclosed that the sensing section is a pressure-sensitive transducer, let alone a plurality of pressure-sensitive transducers.

U.S.S.N. 09/684,058

To the contrary, the present invention mount a plurality of pressure-sensitive transducers in-between a light source (a backlit panel 70) and a LCD panel 80. The present invention touch screen mounting assembly does not use a single sensing element such as that disclosed by Murakami et al. This is clearly recited in the present invention, independent claim 1:

"Claim 1. A touch screen mounting assembly for a liquid crystal display (LCD) panel comprising:

a bottom frame having a substantially ...;

a backlight panel for supplying illumination to said LCD panel ..., said front surface having a plurality of pressure-sensitive transducers mounted thereto;

a liquid crystal display panel positioned juxtaposed to said front surface of said backlight panel sandwiching said plurality of pressure-sensitive transducers therein between; and

a top frame for compressing said compressible springs ..."

U.S.S.N. 09/684,058

The present invention therefore narrowly claims the invention as one that requires a plurality of pressure-sensitive transducers mounted in-between a liquid crystal display panel and a backlight panel. This is patentably distinct from the teaching of Murakami et al wherein a single sensing section 10 which is not a pressure-sensitive transducer is utilized.

The criticality of using a plurality of pressure-sensitive transducers in-between a liquid crystal display panel and a backlight panel is clearly recited in the specification at pages 16 and 17. For instance, at page 16, line 7+:

"The front surface 82 has a plurality of pressure-sensitive transducers 100 mounted thereto. The plurality of pressure-sensitive transducers may be advantageously piezoelectric transducers, ... The piezoelectric transducers 100 preferably has a domed surface that is mounted to face the LCD panel 80 such that a point contact between the transducer 100 and the back surface 86 of the LCD panel 80 is maintained at all times."

U.S.S.N. 09/684,058

Furthermore, at page 17, line 7:

"When the top frame 90 is mounted to the bottom frame 60 sandwiching the backlight panel 70 and the LCD panel 80, the coil springs 76 bias the LCD panel 80 toward the bottom frame 60 such that any slight pressure or contact on the LCD panel 80 can be detected by the plurality, i.e., four piezoelectric transducers 100 to determine the X-Y coordinates of the contact or touch."

The Applicants further submit that the criticality of using a plurality of pressure-sensitive transducers is not taught, disclosed or suggested by either Murakami et al or by the secondary references of Plesinger and Flowers et al.

Similar recitations reflecting such criticality is also repeated in independent method claim 10.

The rejection of claims 1-2, 4, 8, 10 and 12-17 under 35 USC §103(a) based on Murakami et al, Flowers et al and Plesinger is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

U.S.S.N. 09/684,058

Claims 3, 5-7, 9, 11, 14, 16 and 17 are rejected under 35 USC §103(a) as being unpatentable over Murakami et al '837 in view of Flowers et al, Plesinger and further in view of Bowman et al '569. It is contended that while Murakami, Flowers and Plesinger do not teach a plurality of attachment means each including a threaded stud having a shaft portion and two end portions, with a coil spring situated on and encircling the threaded stud, with two fastening means each engaging one of the two end portions, such is taught by Bowman et al.

The rejection of claims 3, 5-7, 9, 11, 14, 16 and 17 under 35 USC §103(a) based on Murakami et al, Flowers et al, Plesinger and Bowman et al is respectfully traversed.

Dependent claims 3, 5-7 and 9 dependent on independent claim 1, while dependent claims 11, 14 and 16-17 dependent on independent claim 10. As presented above, the Applicants have shown that the present invention touch screen mounting assembly that utilizes a plurality of pressure-sensitive transducers mounted in-between an LCD panel and a backlight panel is not taught or disclosed by Murakami et al, Flowers et al and Plesinger, either singularly or in combination thereof. The Applicants respectfully

U.S.S.N. 09/684,058

submit that the additional reference of Bowman et al does not lend any additional weight in a §103(a) rejection of these claims. A reconsideration for allowance of claims 3, 5-7, 9, 11, 14, 16 and 17 is respectfully requested of the Examiner.

Claim 15 is rejected under 35 USC §103(a) as being unpatentable over Murakami et al, Flowers et al, Plesinger, Bowman et al and further in view of Garwin et al '760.

Dependent claim 15 depends on independent claim 10 which recites a method for fabricating a touch screen mounting assembly including the steps of:

"mounting a backlight panel for illuminating said LCD panel to said bottom frame, said backlight panel having a back surface and a front surface, said back surface intimately engages said bottom frame while said front surface having a plurality of pressure-sensitive transducers mounted at each distant corner of said backlight panel;

U.S.S.N. 09/684,058

positioning a LCD panel juxtaposed to said front surface of said backlight panel sandwiching said plurality of pressure-sensitive transducers therein between."

The Applicants respectfully submit that such method steps are clearly not taught or disclosed by Murakami, Flowers, Plesinger and Bowman, either singularly or in combination thereof. The Applicants respectfully submit that the additional reference of Garwin et al, which does not contain any teaching of using a plurality of pressure-sensitive transducers, doe not lend any additional weight in a §103(a) rejection of claim 15. A reconsideration for allowance of claim 15 is respectfully requested of the Examiner.

In the Response to Arguments section of the 06/30/2003 Office Action, the Examiner again argued that "the sensing section, although described by Murakami as a single section, is actually composed of a multiplicity of copper wires 16 and 17 that are sensitive to pressure and generate a current in response to pressure form the input device". The Examiner then cited portions of the specification of Murakami to support his argument.

U.S.S.N. 09/684,058

The Applicants respectfully travers such rejection and reasoning by the Examiner. For instance, by studying Murakami et al closely, it is obvious that, as shown in Murakami et al's Figs. 2 and 3B, and in the specification at column 4, line 4 through column 5, line 30. Specifically, column 5, lines 8+:

"... the copper wires 16 and 17 and patterns formed on the base frame are connected to each other by, for example, soldering, thereby forming a multiplicity of loop coils for detecting X and Y coordinate values. ... Figure 4 shows details of a loop coil assembly 160 for detecting X-coordinate values, and another loop coil assembly 170 for detecting Y-coordinate values. ... The X-direction loop coil assembly 160 and the Y-direction loop coil assembly 170 are superposed closely one on the other with the transparent film 13 and 14 interposed there between".

The Applicants respectfully submit that at no where in the Murakami specification is there any indication that the multiplicity of copper wires 16 and 17 are sensitive to pressure and generate a current in response to pressure from the input

U.S.S.N. 09/684,058

device, as alleged by the Examiner. As a matter of fact, the input device 2 (shown in Fig. 1) is a position pointer formed of a material such as to caused inductance in-between the loop coil assemblies 160, 170 which are formed by the copper wire 16 and 17. In other words, the copper wires of Murakami does not respond to a pressure change and thereby, generates a current such as that utilized and claimed in the present invention (i.e. a plurality of pressure-sensitive transducers).

Regarding Bowman et al, which discloses the mounting of a plurality of pressure-sensitive transducers on a conventional CRT tube between a clear glass plate and the surface of the CRT tube, there can be no motivation to combine the Bowman et al's teaching to Murakami. The two references fall under completely different art areas and, therefore, there can be no motivation to combine them.

Moreover, the present invention teaches, and claims, i.e. such as in claim 1, the use of a plurality of pressure-sensitive transducers mounted in-between a back light panel (for a LCD display unit) and a liquid crystal display panel. Such are neither taught, disclosed or suggested by Murakami et al, Bowman et al,

U.S.S.N. 09/684,058

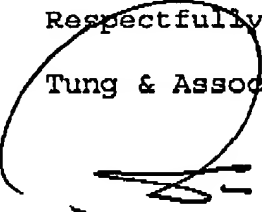
either singularly or in combination thereof. A reconsideration for allowance of claims 1-17 is respectfully requested of the Examiner.

Based on the foregoing, the Applicants respectfully submit that all of the pending claims, i.e. claims 1-17, are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

In the event that the present invention is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the Applicants' representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,

Tung & Associates



Randy W. Tung
Reg. No. 31,311
Telephone: (248) 540-4040

OFFICIAL

RWT\kd

RECEIVED
CENTRAL FAX CENTER

SEP 30 2003